of a forum and a message board established through a computer network, <u>the cross-referenced</u> <u>message documents having a cross-referenced relationship in which a document contributed</u>

5    <u>earlier is referenced by documents contributed afterwards, said apparatus</u> comprising:

a document group analysis device to classify a plurality of documents forming a set of documents into at least one group of cross-referenced documents by [analyzing at least one cross-reference between] <u>determining for each document in the set, which of</u> the documents [in the set] <u>is referenced</u>, and for extracting information about classification as document

10    group information;

a document group keyword extraction device to extract a keyword contained in a document forming part of each group of documents by referring to the document group information; and

a document group keyword display device to display a title [relevant to] <u>of each</u>

15    <u>document in</u> each group of documents and [a corresponding keyword] <u>keywords</u> extracted from the [group of documents] <u>document corresponding to the title</u> by said document group keyword extraction device, <u>the title and the keywords being displayed in areas related to each other</u>.

3. (TWICE AMENDED)  A relevant document display apparatus for displaying a group of documents containing cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network, <u>the cross-referenced</u> <u>message documents having a cross-referenced relationship in which a document contributed</u>

5    <u>earlier is referenced by documents contributed afterwards, said apparatus</u> comprising:

a document group analysis device to classify a plurality of documents forming a set of documents into at least one group of cross-referenced documents by [analyzing at least one cross-reference between] <u>determining for each document in the set, which of</u> the documents [in the set] <u>is referenced</u>, and for extracting information about classification as document

10    group information;

a document attribute analysis device to extract document attribute information about an attribute of each document from a plurality of documents forming the set of documents; and

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a document group structure display device to display cross-references in each group of documents in a tree structure in which at least one of the document attribute information and abbreviated information for each document forming part of the group of documents is displayed at [each] a corresponding node.

8. (TWICE AMENDED) A relevant document display apparatus for displaying a group of documents containing cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network, the cross-referenced message documents having a cross-referenced relationship in which a document contributed earlier is referenced by documents contributed afterwards, said apparatus comprising:

a document group analysis device to classify a plurality of documents forming a set of documents into at least one group of cross-referenced documents by [analyzing at least one cross-reference between] determining for each document in the set, which of the documents [in the set] is referenced, and for extracting information about classification as document group information;

a topic analysis device to further classify each [of the classified] group of cross-referenced documents based on topics extracted from each document forming part of each group of cross-referenced documents, and [extracting] to extract information about [the] further classification as topic classification information;

a topic keyword extraction device to extract [a keyword] keywords contained in [a] each document relevant to each topic obtained by the further [classifying] classification of each of the groups of documents by referring to the document group information and the topic classification information; and

a topic keyword display device to display[, for each of the groups of documents and topics obtained by further classification of the groups of documents,] a [relevant] title of each document relevant to each topic obtained by the further classification and [a keyword] keywords extracted from each document corresponding to each title by said topic keyword extraction device [and associated with each topic], the title and the keywords being displayed in areas related to each other.

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9. (TWICE AMENDED) A relevant document display method for displaying a group of documents containing cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network and having a cross-referenced relationship in which a document contributed earlier is referenced by documents contributed afterwards, said method comprising:

classifying a plurality of documents forming a set of documents into at least one group of cross-referenced documents by [analyzing at least one cross-reference between] determining for each document in the set, which of the documents [in the set] is referenced;

extracting information about classification as document group information;

extracting a keyword contained in a document forming part of each group of documents by referring to the document group information; and

displaying a title [relevant to] of each document in each group of documents and [a corresponding keyword] keywords extracted from the [group of documents] document corresponding to the title, the title and the keywords being displayed in areas related to each other.

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11. (TWICE AMENDED) A relevant document display method for displaying a group of documents containing cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network and having a cross-referenced relationship in which a document contributed earlier is referenced by documents contributed afterwards, said method comprising:

classifying a plurality of documents forming a set of documents into at least one group of cross-referenced documents by [analyzing at least one cross-reference between] determining for each document in the set, which of the documents [in the set] is referenced;

extracting information about classification as document group information;

extracting document attribute information about an attribute of each document from a plurality of documents forming the set of documents; and

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displaying cross-references in each group of documents in a tree structure in which the document attribute information or abbreviated information for each document forming part of the group of documents is displayed as each node by referring to the document

15  group information and the document attribute information.

16.  (TWICE AMENDED)  A relevant document display method for displaying a group of documents containing cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network and having a cross-referenced relationship in which a document contributed earlier is referenced by documents contributed afterwards, said method comprising:

classifying a plurality of documents forming a set of documents into at least one group of cross-referenced documents by [analyzing at least one cross-reference between] determining for each document in the set, which of the documents [in the set] is referenced;

extracting information about classification as document group information;

10  further classifying each of the classified group of documents based on topics extracted from each document forming part of each group of documents, and extracting information about [the] further classification as topic classification information;

extracting [a keyword] keywords contained in [a] each document relevant to each topic obtained by the further [classifying] classification of each [of the groups] group of

15  cross-referenced documents by referring to the document group information and the topic classification information; and

displaying [, for each of the groups of documents and topics obtained by further classifying the groups of documents,] a [relevant] title of each document relevant to each topic obtained by the further classification and [a keyword] keywords extracted [in said topic

20  keyword extracting step and associated with each topic] from each document corresponding to each title, the title and the keywords being displayed in areas related to each other.

17.  (TWICE AMENDED)  A computer-readable storage medium storing instructions to direct a computer to perform a method for displaying a group of documents containing

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cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network and having a cross-referenced relationship in

5    which a document contributed earlier is referenced by documents contributed afterwards, said method comprising:

classifying a plurality of documents forming a set of documents into at least one group of cross-referenced documents by [analyzing at least one cross-reference between] determining for each document in the set, which of the documents [in the set] is referenced;

10    extracting information about classification as document group information;

extracting a keyword contained in a document forming part of each group of documents by referring to the document group information; and

displaying a title relevant to each group of documents and a corresponding keyword extracted from the group of documents.


18.  (TWICE AMENDED)  A computer-readable storage medium storing instructions to direct a computer to perform a method for displaying a group of documents containing cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network and having a cross-referenced relationship in

5    which a document contributed earlier is referenced by documents contributed afterwards, said method comprising:

classifying a plurality of documents forming a set of documents into at least one group of cross-referenced documents by [analyzing at least one cross-reference between] determining for each document in the set, which of the documents [in the set] is referenced;

10    extracting information about classification as document group information;

extracting document attribute information about an attribute of each document from a plurality of documents forming the set of documents; and

displaying cross-references in each group of documents in a tree structure in which the document attribute information or abbreviated information for each document

15    forming part of the group of documents is displayed [as each] at a corresponding node by referring to the document group information and the document attribute information.

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19. (TWICE AMENDED) A relevant document display apparatus for displaying on a display device a group of documents containing cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network, the cross-referenced message documents having a cross-referenced relationship in which a

5   document contributed earlier is referenced by documents contributed afterwards, said apparatus comprising:

a contents estimation device to estimate [contents of the group of documents based on contents of a document and] topic patterns of [opinion input by authors from] the cross-referenced message documents stored in a document database [storing a group of cross-

10   referenced] based on contents of the documents, information pertaining to the documents, and cross-references among the documents, and to generate [an index] plural types of display indexes corresponding to [a] the topic [pattern of the estimated contents] patterns;

an input device to input a retrieval request for the document database from a user;

15   a retrieval engine device to retrieve a document in the document database and to produce a retrieval result; and

a view generation device to generate [a plurality of] plural types of views [using a] for displaying the retrieval result from said retrieval engine device [and the index] using the display indexes, [switching] to switch the views, and [displaying] to display the views on [a]

20   the display device.

30. (TWICE AMENDED) A method of displaying a relevant document for displaying a group of documents containing cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network, the cross-referenced message documents having a cross-referenced relationship in which a document contrib-

5   uted earlier is referenced by documents contributed afterwards, said method comprising:

estimating [contents of the group of documents based on contents of a document and] topic patterns of [opinion input by authors from] the cross-referenced message documents

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stored in a document database [storing a group of cross-referenced] based on contents of the documents, information pertaining to the documents, and cross-references among the

10 documents;

generating [an index] plural types of display indexes corresponding to [a] the topic [pattern of the estimated contents] patterns;

inputting a retrieval request corresponding to the document database from a user;

15 retrieving a document in the document database to produce a retrieval result; [and]

generating [a plurality of] plural types of views [using] for displaying the retrieval result [and the index,] using the display indexes;

switching the views[,]; and

20 displaying the views on a display device.


31. (TWICE AMENDED) A computer-readable storage medium storing instructions to direct a computer to perform a method for displaying a group of documents containing cross-referenced message documents contributed to at least one of a forum and a message board established through a computer network, the cross-referenced message documents having

5 a cross-referenced relationship in which a document contributed earlier is referenced by documents contributed afterwards, said method comprising:

estimating [contents of the group of documents based on contents of a document and] topic patterns of [opinion input by authors from] the cross-referenced message documents stored in a document database [storing a group of cross-referenced] based on contents of the

10 documents, information pertaining to the documents, and cross-references among the documents;

generating [an index] plural types of display indexes corresponding to [a] the topic [pattern of the estimated contents] patterns;

inputting a retrieval request corresponding to the document database from a

15 user;

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